

# **WATER POLICY FRAMEWORK**

**August 1996**



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## **SAN JOSE WATER POLICY FRAMEWORK: A GUIDE FOR THE FUTURE**

Water is the lifeblood of San Jose - a precious resource for our homes, businesses, and natural environment. In recent years, there has been rising concern about the supply, use, and quality of the water resources on which we depend. In a September 1994 survey conducted by the City of San Jose, more than 70 percent of the respondents said that the availability of water and the pollution of the Bay are serious problems. In recognition of these concerns, the City has developed a Water Policy Framework to ensure a comprehensive approach to water issues.

Indeed, the City of San Jose faces a number of challenges related to water. The availability of long-term water supplies, for example, remains uncertain. This issue is of particular concern as the City seeks to accommodate new development. Environmental protection efforts, meanwhile, must be balanced with social and economic impacts. The City must work with regulatory agencies to reinvent regulation without undermining the environmental gains of the last twenty years. And finally, there are privatization issues and options for facilities owned and operated by the City.

In recent years, the City has emerged as a national leader in environmental policies, program development and implementation. Annually it spends more than \$50 million on water quality management and water supply programs through the Environmental Services Department alone. The fundamental purpose of these programs is to ensure that neither environmental degradation nor water shortages will hamper the City's ability to achieve economic growth and to attain public health and safety. To maintain its environmental leadership through the next century, the City must continue its efforts to find comprehensive responses to water-related issues as they arise.

### *San Jose Water Policy Framework*

These various concerns, coupled with the substantial investment in water programs, prompted City staff to identify and clarify San Jose's water policies. The result of this effort is the Water Policy Framework, which serves as a guide for current and future environmental actions by the

City. This document defines the City's role in promoting sound water policies and in identifying priorities for those issues and areas that are most urgently in need of further attention.

For the first time, the City has an integrated, comprehensive guide that decisionmakers can use to ensure that water policies and programs are mutually reinforcing and do not conflict with one another or with other City goals, objectives and programs. This guidance will enhance the City's ability to respond effectively to water-related challenges and to allocate limited resources to areas of the ecosystem in the most efficient manner.

Development of the Water Policy Framework was initiated by a cross-divisional team in the City's Environmental Services Department (ESD), with input and review from within ESD, from other City departments, from key external stakeholders, and from members of the public. Four stakeholder workshops were held in December 1995 with 1) business and industry groups and water retailers; 2) environmental and civic organizations; 3) members of environmental, public and tributary agencies, the Regional Water Quality Control Board, and the Treatment Plant Advisory Committee; and 4) the Santa Clara Valley Water District. Two public meetings were held the following month. A full report on the public review and stakeholder process is provided in Appendix C.

The Water Policy Framework sets forth the following water-related mission and goals:

The City's mission is to ensure:

- A healthy, reliable and adequate supply of high quality water;
- Efficient, economic and sustainable use of water supplies;
- High quality wastewater discharge into the San Francisco Bay;
- The protection of public health and safety;
- The preservation and enhancement of habitats, ecosystems and endangered species;
- and
- The protection of surface and groundwater resources.

To carry out our mission, the City will work cooperatively with our community and other agencies to achieve the following goals:

- Ensure an adequate and high-quality water supply to meet current and future needs;

- Achieve a balance between public health, a sound economy and environmental quality;
- Minimize pollution to the potable, nonpotable and storm drain water systems;
- Ensure the highest, best and most efficient use of water;
- Maintain and re-establish habitat and biological diversity of wetland areas and riparian corridors in concert with flood control, recreation and public use policies.

To achieve these goals, the City has developed a list of policies that fall under seven strategic directions: ecosystem protection; water supply and use; pollution prevention; wastewater treatment; education and involvement; interagency cooperation; and advocacy. These policies constitute the Water Policy Framework.

#### *Benefits of the Policy Framework*

The Water Policy Framework will help the City by providing the structure for developing and prioritizing work plans and programs that will maximize ecosystem protection. It will assist the City and ESD in forming water-related recommendations on pending legislative and regulatory actions, development proposals, environmental impact reports, programs, and other related projects. In addition, the framework will guide departmental budget recommendations on both the operating and capital budgets of water programs, and will assist in the determination of staff and resource allocations for water programs.

Furthermore, it will govern ESD's regulatory approach to entities regulated by the City. The framework will also assist the City in providing input to water resources planning efforts by the Santa Clara Valley Water District and other agencies to ensure an adequate and affordable supply of water to meet City needs. And finally, it will provide a strong connection between social, political, and scientific issues.

The Water Policy Framework is intended not only to protect the City's ability to meet its environmental goals and to implement its General Plan, but also to ensure that the City's water-related programs are implemented with the greatest efficiency. There has been a long-standing

assumption that water supplies will be adequate to meet San Jose's development needs. Recently, however, there has been concern that water supply shortages may occur by the year 2020. Another motivation for pursuing development of an internally consistent, city-wide policy framework is to address the perception held by some that the interaction between growth and development policies and water supply projections is underexamined, and may in fact be circular. The Water Policy Framework, therefore, helps lay the groundwork needed to ensure that the assumptions of the past will apply in the future as well. It will enhance collaborative efforts between the City, the Water District, and all stakeholders to plan for appropriate changes in water supply and development patterns.

Furthermore, this document will guide the City in developing a proactive approach to current and future regulation, and offer rational alternatives to potentially costly or narrowly focused measures. It will do so by proposing more effective, scientifically supported and economical solutions that can be implemented without sacrificing ecosystem protection. In addition, the policy framework serves an educational purpose, by identifying key issues and challenges that face our community, encouraging and proposing collaborative efforts to meet water-related challenges.

Finally, by its mere existence, this framework demonstrates the City's common-sense approach to managing water-related environmental problems. This approach will equitably balance the sometimes conflicting needs of urban growth, economic activity, natural habitat and endangered species protection, cost containment, and the long-term environmental quality of San Jose. This show of good faith will increase San Jose's credibility with both those it regulates and those who regulate the City, as well as environmentalists, business people and the general community.

## **I. WATER: SAN JOSE'S NATURAL RESOURCE**

### **San Jose: Natural Environment**

The City of San Jose, California, is located at the easterly side of the Santa Clara Valley. To the southwest, the Valley gives way to the Santa Cruz Mountains, while the eastern edge of the Valley consists of the Diablo Range. The City of San Jose, which encompasses approximately 173 square miles, has an estimated population of 846,000, a number projected to top 1 million by the year 2010. It is the third largest city on the West Coast, the eleventh largest in the United States.

The natural communities in the region range from salt water and fresh water marshes to scrub brush, foothill woodlands and coniferous forest. The hillsides surrounding the City are an extensive land resource devoted to nonurban uses such as watershed, range lands and wildlife habitats.

The hills and mountains around the Santa Clara Valley are the source of numerous perennial and intermittent streams. Major waterways include Los Gatos Creek, Guadalupe River and Coyote Creek. Permanent bodies of water include several reservoirs and the San Francisco Bay.

These streams and other bodies of water are important environmental features for the City and the region. Equally important is the quality of the water carried or contained by the features and the preservation of the special lands or ecosystems that are an integral part of these features. The San Francisco Bay and adjacent marshlands are particularly important to the region.

### **Historical Perspective**

The geography of the South San Francisco Bay has changed considerably since the time of the Ohlone, who are recognized as the earliest inhabitants of the Santa Clara Valley region. According to Stephen Powers, a nineteenth century ethnologist, the California Indians in the Bay



Area were "almost amphibious." Water was everywhere in the early days: thousands of acres of swamps and rivers that flowed throughout the year. These aquatic environments were the home to many plants and animals which provided food for the Ohlone.

Places that are often dry now -- the creeks, streams and rivers -- were full of water. Before being channeled, all the major rivers -- the Carmel, Salinas, Pajaro, Coyote Creek, and Alameda Creek -- as well as minor streams, spread out in the winter and spring to form wide, marshy valleys.

Today, the Santa Clara Valley watershed consists of lands, reservoirs, rivers, streams, creeks, groundwater recharge areas and distribution and treatment facilities.

The climate within the Santa Clara Valley dictates the amount of water that we receive. The valley has a semi-arid, Mediterranean-type climate where the summers tend to be warm and dry with rainfall occurring between November and April. The Mediterranean-type climate creates an attractive place to live, but provides limited amounts of water to support a growing population. And even those limited amounts of water can be reduced to mere drops during times of drought.

### **Local Water Supply**

San Jose receives a relatively modest 14 to 15 inches of rainfall per year, which is characteristic of Mediterranean-type climates. This type of climate is also subject to recurring and sometimes long lasting droughts. In normal rainfall years, only about 50% of the County's water supply is provided locally, primarily from groundwater sources. In drought years, up to 90% of the water used by the County is imported. The three major groundwater basins, which are interconnected and underlie nearly 30% of the total County area, are the Santa Clara, Coyote, and Llagas Valleys. Groundwater supplies nearly 60% of the total water used in the Santa Clara Valley basin area and nearly all of that used in the Coyote Valley and Llagas Valley basin areas.

Both the adequacy of supply and quality of water resources are of concern to the community. The local water resource system consists of watershed lands, underground aquifers, reservoirs, canals, streams, rivers, creeks, and the riparian vegetation associated with them, and

groundwater recharge areas. This local system is supplemented by the import of water from external sources.

The groundwater pumped from most of the existing wells in the County generally is of good quality. However, areas near the San Francisco Bay experience saltwater intrusion from an upper aquifer; and the migration of saline water through tidal channels causes contamination. These occurrences of saltwater intrusion are possible because of the subsidence which has resulted from historical groundwater overdraft.

The problem of subsidence is a result of withdrawal of groundwater for agricultural, domestic and industrial use at a faster rate than natural or artificial replenishment. In addition, development over large portions of the valley floor has reduced the percolation capacity of the land, thereby reducing natural replenishment and perpetuating the subsidence. The Santa Clara Valley Water District recharges and stabilizes the groundwater aquifer through percolation activities.

Water is a finite resource and local and imported water resources should be protected from pollution as much as possible and reclaimed to protect the adequacy of supplies, limit the dependence on less reliable sources of supply, and avoid the overdrafting of the underground water basin to reduce land subsidence.

### **Roles And Responsibilities Of Public Agencies In Water Issues.**

#### ***Federal Government***

The federal government has an overarching role in the management of water. It sets standards, passes laws, and creates regulatory tools to ensure that public health and environmental quality goals are met. The federal government may also delegate its powers to states when they are able to meet certain requirements. All these agencies work under the provisions of the Clean Water Act and also the Endangered Species Act. Key agencies include the following:

*Environmental Protection Agency (EPA)*

The EPA oversees the implementation and enforcement of public health and environmental laws, including the Safe Drinking Water Act and the Clean Water Act, through promulgation of regulations, issuance of guidance documents, and enforcement. The EPA approves delegation of authority to states. The EPA also cooperates with the Army Corps of Engineers and Department of Fish and Wildlife in resolving issues related to endangered species protection and wetlands preservation issues.

#### *Army Corps of Engineers*

The Corps is charged with the protection of navigable waterways. It reviews and issues permits for filling and dredging waters of the United States, including wetlands.

#### *U.S. Fish and Wildlife*

U.S. Fish and Wildlife is responsible for protection of wildlife including species which are endangered or threatened. It advises the EPA and the Corps of Engineers as well as state agencies concerning the possible effects of proposed actions upon wildlife, and acts as the regulatory body for the Endangered Species Act.

#### *Bureau of Reclamation*

The Bureau of Reclamation is part of the Department of the Interior. In California, the Bureau administers and operates the Central Valley Water Project, a complex of dams and distribution systems, that captures, stores, and transports water to urban and rural users, subject to the allocations of the State Water Resources Control Board.

### ***California State Government***

The State of California performs a number of functions which have been delegated to it by the federal government and also manages its own activities, such as the California Water Project.

#### *California Environmental Protection Agency*

The California Environmental Protection Agency (CAL-EPA) performs the same functions in California as does the EPA for the nation as a whole. This power has been delegated to

CAL-EPA by the federal EPA subject to ongoing EPA oversight intended to ensure that all applicable federal requirements are being met.

*State Water Resources Control Board (SWRCB)*

The Board administers water rights, water pollution control, and water quality functions as part of CAL-EPA. It also provides policy guidance and budgetary authority to the Regional Boards with which it shares authority for implementation of federal and state laws and regulations. The Board prepares the Inland Surface Water and Enclosed Bays and Estuaries Plans (State Plans) to be used by Regional Boards.

*Regional Water Quality Control Boards*

The nine Regional Water Quality Control Boards (RWQCB) have the mission of protecting the surface and ground waters of the regions within which they are located. Subject to SWRCB approval, they prepare and revise policies to facilitate accomplishing their missions. They also issue and enforce compliance with National Pollutant Discharge Elimination System (NPDES) Permits. Finally they address regional water quality issues through creation and triennial revision of Water Quality Control Plans, also known as Basin Plans.

*Department of Fish and Game (DFG)*

The California Department of Fish & Game has broad responsibilities to protect and enhance the state wildlife resources. Fish & Game has been mandated with the enforcement of fishing and hunting regulations established by the Fish & Game Commission. Other responsibilities include: consultation with lead state agencies on potential effects to threatened and endangered species; recommendations for species, habitat protection and acquisition, and enforcement on pollution incidences.

*California Department of Water Resources (DWR)*

The DWR has similar duties for the State Water Project as does the Bureau of Reclamation for the Federal Government.

*California Department of Health Services*

The California Department of Health Services regulates drinking water quality in the State of California. California is a primacy state which results in the State being the enforcer of both Federal and State regulations. If the State's regulations are more stringent than the Federal regulations, it is the State regulations that must be met. Therefore, all potable water supplied to the residents of San Jose must comply with the California Department of Health Services' requirements.

### ***Local Agencies***

There are several major agencies within Santa Clara County that have key water roles and responsibilities.

#### *Santa Clara Valley Water District (SCVWD)*

The mission of the SCVWD is two fold. The first is to provide water at the wholesale level in sufficient quantity and quality for present and future beneficial use by the county's lands and population. To accomplish this the District manages 10 local reservoirs and the county's groundwater basin; imports water from sources outside the county; and develops or participates in programs aimed at water conservation and protecting the quality of water sources. The District also designs and builds water conveyance facilities and operates three water treatment plants. Both treated water and groundwater are sold to 13 water retailers who service the communities of Santa Clara County with their own distributions systems.

The District is also the administrator and a co-permittee along with 14 other local agencies including San Jose, of the Santa Clara Valley Non Point Source Pollution Control Program (NPS Program). An Integrated Water Resources Planning (IWRP) process has been endorsed by the District's Board of Directors as an approach that best ensures the development of an implementation plan to establish the County's long-term water supply reliability.

The second mission is to manage flood and storm waters within the county, thereby providing for public safety and protection of property and natural resources. The District plans, designs, constructs and maintains flood protection projects along the county's 700

miles of creeks and rivers and at the edge of the San Francisco Bay, where flooding may result from high tides. The District works closely with the community in establishing work plans and priorities for flood protection projects and associated maintenance. The District also has local regulatory jurisdiction over construction and development activities within and adjacent to waterways within the County.

#### *City of San Jose*

The City of San Jose has General Planning authority for most of the watershed and is the majority owner and administrator of the San Jose-Santa Clara Water Pollution Control Plant (Plant). The City is responsible for ensuring compliance with the Plant's wastewater (NPDES) Permit. It is also a co-permittee of the Santa Clara Valley Nonpoint Source Pollution Control Program and implements the City-specific elements of that program as they apply to San Jose. The City also owns a water utility (San Jose Municipal Water System), which supplies water to approximately 10% of the City.

#### *Resource Conservation Districts*

The Guadalupe/Coyote Resource Conservation District is a special state-enabled district that provides assistance programs to landowners regarding soil and water conservation, watershed protection, and water quality protection and enhancement.

#### *City of San Francisco - Public Utilities Commission and Department of Water - Hetch Hetchy*

Since 1969, the City of San Jose Municipal Water System has been receiving water from the San Francisco Water Department's Hetch Hetchy pipeline. Under the Federally mandated Raker Act, this water is not generally available to investor-owned utilities.

## II. CURRENT STATE OF WATER IN SAN JOSE

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### **Environmental Quality of the Watershed.**

#### ***South San Francisco Bay***

The South San Francisco Bay is the portion of San Francisco Bay that lies to the south of the Dumbarton Strait. The San Jose-Santa Clara Water Pollution Control Plant discharges its effluent into Artesian Slough, which flows into Coyote Creek, which in turn flows into the Bay.

Water quality of the effluent, as measured in terms of biological pollutants and biochemical oxygen demand (BOD), has steadily improved since at least the early 1960s. With respect to heavy metals (copper, lead, nickel, cadmium, silver, mercury and zinc) however, the situation is less clear. Testing for these metals began in the 1980s, and the results led the RWQCB to find that metals levels might be high enough to pose a threat to aquatic life. The South Bay has been listed by state and federal agencies as an “impaired water body” due to elevated levels of some metals. The Regional Board also instituted requirements for testing Bay waters for the presence of metals, and required the City to begin studying methods for reducing metal discharges. Studies to determine the actual effect of heavy metals on aquatic life are ongoing as are programs to reduce the quantities of heavy metals in the discharge from the Water Pollution Control Plant.

While the Water Pollution Control Plant can reduce pollutants in the sanitary sewer system, it cannot protect the Bay from pollutants traveling through the storm drain system or those from runoff. It may be said with confidence that the Plant is operating at near maximum efficiency and that any further increases in the quality of the Plant’s discharge through additional treatment will come at an inordinate cost per pound of pollutant removal. Consequently, the most cost-effective methods for further reducing pollutant discharges to the Bay are likely to be those that focus on sources originating outside the sanitary system.

Nonpoint source (NPS) runoff accounts for the majority of the metals load reaching the Bay from this watershed. According to a 1991 study, nonpoint source runoff is by far the most

significant contributor of certain toxic pollutants to the South Bay (EOA, December 1991. “Investigation of Unpermitted Sources of Copper & Nickel in San Jose/Santa Clara WPCP Influent”). Protection of the creeks, rivers and the Bay from all nonpoint source pollution can only be provided by controlling the source of this pollution.

### ***Creeks and Rivers***

The first effort to protect the water quality of the watershed’s creeks and rivers dates back to 1916, when San Jose separated its storm drainage and sanitary sewer systems and constructed a sewer outfall that discharged sanitary sewage to Grey Goose Slough in Alviso near the present discharge to Artesian Slough. During the years before World War II, the rest of the county’s urban centers followed suit.

In the early years of the twentieth century, the watershed’s creeks supported salmon and steelhead runs as well as substantial trout fisheries. Due to both flow and pollution issues, these fisheries suffered a serious decline to the point of almost nonexistence. By 1986 Chinook Salmon were again documented in local creeks and rivers and Steelhead trout were detected in Guadalupe, Saratoga and Stevens Creeks. There remains a ban on the consumption of trout caught in Guadalupe River, however, due to mercury contamination from abandoned mines.

The largest impacts to local creeks and rivers comes from the pressures of urbanization. Both flow changes and pollution from a variety of sources have negatively impacted the health of these waters. The majority of the environmental problems associated with local creeks and rivers are caused by traditionally non-regulated sources such as wet weather runoff. As a result, the RWQCB required the cities within this watershed, the County and the SCVWD to begin to study the sources and levels of NPS pollution being generated within the area. This requirement was imposed prior to the imposition of NPS pollution control measures as mandated by Federal law.

San Jose and the other members of the Santa Clara Valley Nonpoint Source Pollution Control Program (NPS Program) conducted the required studies and began implementing required control measures. In 1990, the RWQCB issued an NPDES permit for NPS discharges to the NPS Program, requiring the implementation of various control measures. These measures



include public education, source reduction and pollution prevention programs, further research efforts, and the implementation of several pilot programs. A new permit was granted in 1995, which contains additional programmatic elements designed to reduce pollutant loadings.

Water quality of the watershed's creeks is likely to improve markedly over time simply because NPS flow will be controlled at the pollutant source. Therefore, pollutant reductions in NPS flows should be considerably more efficient and less expensive on a cost per pound removed basis than equivalent removals from the sanitary sewage stream.

### ***Wetlands***

Wetlands are areas of land that are saturated for a significant portion of the year and contain plant species that are specially adapted to survive and reproduce on saturated or even inundated land. They are transitional areas of land between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. As hosts to a unique set of plants that could not survive under drier conditions, wetlands support unique sets of animal species. When wetlands are lost due to natural causes or due to human activities, their attendant species of plants and animals are also lost. The same sort of species losses or movements will tend to occur when a saline or brackish wetland is converted to a freshwater wetland and visa versa. Wherever sufficient wetland losses have occurred, the species occupying those wetlands have been displaced and may become endangered.

It is generally conceded that about 90% of the historic wetlands in the entire Bay Area have been lost to development in the period since European settlement began. The vast majority of these losses occurred prior to the passage of the Endangered Species Act and before wetlands diminution was even recognized as a problem. Fresh water wetland losses have occurred primarily as a result of urban development. For example, Willow Glen, as indicated by its name, was almost entirely a wetland prior to its urbanization in the 1920s. Furthermore, less extensive losses of wetlands have occurred as a result of early efforts to provide flood protection by damming and channeling local streams.

Saltwater wetland losses have occurred primarily as the result of the diking off of historic wetlands for use as salt evaporation ponds and to a lesser extent for agricultural and urban uses. A comparatively minuscule additional loss of saltwater wetlands, according to the State Water Resource Control Board and the Regional Water Quality Control Board, was caused by the high discharge flows from San Jose's Water Pollution Control Plant. These latter losses occurred after passage of the Endangered Species Act, so the City has been required to mitigate for them by creating new saltwater wetlands.

Fortunately, the loss of further wetlands has been checked in recent years, and when unavoidable losses do occur they are mitigated. For example, the Santa Clara Valley Water District routinely provides mitigation for any losses caused by its operations and maintenance activities, new road construction is mitigated by the responsible agencies, and the City requires mitigation for any losses resulting from urban development.

San Francisco Bay wetlands losses in the estuary have been brought to a virtual halt. However, the previous losses were so severe that many plant and animal species have been seriously affected and have been added to the state and federal lists of threatened and endangered species.

Wetlands include tidal salt, brackish marsh, and upland and seasonal freshwater marshes, as well as adjacent riparian habitats. Wetlands environments must be viewed from a holistic standpoint to acknowledge the interdependencies of the various types of wetlands. The California clapper rail and salt marsh harvest mouse, which depend on salt marshes to survive, are currently listed as endangered species. These species currently define the habitat type hierarchy for gauging the overall health of the estuary. However, other threatened species that inhabit the local wetlands are equally dependent on the brackish and freshwater wetlands for survival.

### ***Groundwater***

In the years before 1970, little or no effort was necessary to protect the quality of groundwater. In the 1980s a series of chemical releases from high tech industries, deteriorating and leaking underground storage tanks, and other factors caused localized deteriorations in groundwater quality. A regulatory system establishing permitting, inspection, cleanup and enforcement programs was quickly put in place. The system worked well, and the problems were corrected.

Now it seems likely that continuation of the present measures and levels of effort will be sufficient to provide long-term protection of groundwater quality.

Starting in 1983 with the adoption of the City's Hazardous Materials Storage Ordinance, the impacts of leaking underground storage tanks (UST) have been mitigated through regulation of USTs which requires replacement of single-wall tanks and monitoring for leaks at all facilities with USTs. Sites which have been identified as having "unauthorized releases" are being cleaned under a fuel leaks program initiative in 1988 by the Santa Clara Valley Water District and the Regional Water Quality Control Board. To date, over 1,900 sites have been identified and are being monitored or actively cleaned up. The prevention and clean up programs have led to a significant decline in new contamination sites and a higher level of protection for our groundwater.

### ***Flood Control***

San Jose and the Santa Clara Valley have a history of flooding which has resulted in loss of life and property. In San Jose, the most serious flooding in recent history occurred in the Alviso and North San Jose areas. In the first few weeks of 1995, Valley residents accustomed to water rationing and conservation, experienced eleven consecutive days of rain. The surface of the Lexington Reservoir rose 38 feet within five days, all of the Water District's reservoirs overflowed, and 24 million gallons of water flooded Highway 87.

Although the Santa Clara Valley Water District has the primary responsibility for flood control and modifications to stream channels and regulatory jurisdiction over activities to and in streams, San Jose has jurisdiction over, and responsibility for, the development of areas adjacent to all rivers and streams in the City's Urban Service Area. Therefore, City policies and land use decisions directly affect the design of channel modifications required as part of a development. In particular, the City's regulation of development is the vehicle for requiring the dedication of waterways to the Water District, preservation of flood plains and, in some cases, the construction of flood control improvements. Policies related to flood control are included in the City's adopted General Plan; San Jose 2020, and are listed in Appendix B.

### ***Surface Water Reservoirs***

Drinking water for San Jose residents comes from both surface water reservoirs and groundwater wells. The Santa Clara Valley Water District (SCVWD) and San Jose Water Company operate surface water reservoirs in Santa Clara County. Four of the ten reservoirs operated by the SCVWD are within San Jose's city boundaries. Water from some of the District's reservoirs is sent to facilities for treatment and disinfection before reaching the consumers' taps. Water from all the District's reservoirs is also used for groundwater recharge.

Protecting the source of drinking water at the reservoir is essential because not all contaminants in the water can be completely removed at the treatment plants or through filtering during groundwater recharge. Some disease-causing organisms (pathogens) are difficult to remove and may not be affected by disinfection at the treatment plants. Certain other dissolved chemicals are not effectively removed during recharge (percolation) to the groundwater table. Surface water protection is therefore an important measure of protection of the community's drinking water supply.

The amount of land owned and managed by the SCVWD surrounding these reservoirs is relatively small. Increased development, a change in historic use, and certain activities within reservoir watersheds have the potential to pollute the reservoirs. The SCVWD is developing a program to inventory, identify and quantify water quality contamination sources, existing and potential, and will develop methods to minimize negative impacts to reservoir water quality. There is an ongoing need for collaboration and cooperation on decisions related to land use proposals that have the potential to impact the reservoirs, so that a balance is achieved between drinking water quality objectives, development and recreational needs and other beneficial uses of water.

### **Water Supply, Demand, Use and Quality**

#### ***Water Supply***

San Jose's supply of potable water is determined by many factors, almost all of which are beyond the City's control. These factors include the level of annual rainfall, storage capacity for snow pack runoff, contractual arrangements between water wholesalers and their suppliers, prevailing contractual rights during dry periods and the level of federally mandated

environmental mitigation for a given water body. Though identifying trends for such factors is difficult, these factors can be understood best in the context of trends for the region as a whole. Water supplies for the metropolitan area are quite variable, and subject to increasingly competitive interests as prevailing contractual rights are allocated and demand for environmental mitigation escalates.

Traditional developments of new sources of water supply in California have centered around large, dam-related or aqueduct-driven water projects under the authority of the federal or state government. The Santa Clara Valley Water District, the water wholesaler in San Jose, sells this water, after treating it to meet drinking quality standards or recharging into the groundwater aquifers, to local retailers. These retailers include the San Jose Municipal Water System, San Jose Water Company, and Great Oaks Water Company, all of whom directly serve residential and nonresidential customers. The SCVWD also recharges groundwater supplies for a surface water and groundwater conjunctive use program, in addition to treatment and sale to local retailers.

A new major reservoir is being constructed by the Metropolitan Water District of Southern California to store 800 KAF. The Los Banos Grandes project is currently being evaluated by the State Water Project contractors for feasibility and cost. If the Los Banos Grandes project is developed, its purpose would be to store the existing supply that is not currently utilized. The SCVWD may investigate developing a new reservoir, among other alternatives, which will be evaluated in the Integrated Water Resources Planning process which is currently underway.

Within California, the largest federal project, the Central Valley Water Project, was begun during the Depression, and is experiencing the impact of deferred maintenance. A consortium of the project's contractors, primarily agricultural interests, are negotiating a potential purchase of the project from the federal government. The State Water Project, which has never been completed, is also challenged, and does not generate its expected yield, operating at half its intended capacity. Recent experience with the melting snow pack in the Sierras (which in May 1995 stood at 17 feet), indicates that holding capacity could be increased dramatically to accommodate large runoff years, but there are no funds available to develop new storage capacity.

## Supply Components

The following table (Table 1) contains data provided by the SCVWD either in its own documents or city planning documents. The first column of the table indicates the estimated supply of water for the District in an average year. As shown, in such years, the District expects to get 48% of its supply from “local” sources. That is, of the expected 489 thousand acre feet (KAF) of supply, 234 KAF will come from surface reservoirs or groundwater, and 255 KAF will be imported from a combination of sources, including Hetch Hetchy reservoir, the State Water Project, or the Central Valley Water Project.

The second column displays the annual “entitlements” the District can expect to receive, based on their contracts with the imported water suppliers. As shown, the expected amount of imported water for which the District has contracts is 322 KAF, which is somewhat less than the average amount of water that historically has been demanded annually by District customers (400 KAF). These figures indicated that, in an average year, if the District were to receive its entire entitlement, 78 KAF of water would be needed from local supplies to satisfy demand. This can be interpreted as reasonable for dry years, when local supplies may be taxed.

TABLE 1: DISTRICT-WIDE WATER SUPPLY & DEMAND PROJECTIONS  
(All figures in 000’s of Acre Feet)

	Average Year Supply	Contract Entitlement <sup>1</sup>	Estimated Dry Year Supply	1991 Actual Deliveries <sup>1</sup>
<b>LOCAL</b>				
Surface	100	---	60	60 <sup>2</sup>
Ground	120	---	75	75 <sup>2</sup>
Reclaimed	<u>14</u>		<u>14</u>	<u>--</u>
Subtotal	234	---	149	135
<b>IMPORTED</b>				
Hetch Hetchy <sup>3</sup>	75	70	70	47
State Water Project	70	100	40	51
Central Valley	<u>110</u>	<u>152</u>	<u>80<sup>4</sup></u>	<u>48</u>
Subtotal	255	322	190	146
<b>TOTAL SUPPLY</b>	489		339	281

- 1: Information contained in “Regional & Local Water Supply Issues,” May 1992, San Jose Department of City Planning
- 2: Best-case estimate selected by staff; e.g. assumes that all of dry year supply was available.
- 3: Hetch Hetchy water is actually received by water retailers, not the SCVWD, but is shown here to complete the overall water supply picture for the customers of the District.
- 4: Following 1991, the Central Valley Water Project operators instituted a shortage policy for Municipal and Industrial (M&I) customers which provides for their preferential treatment over agricultural users in the case of a water shortage. This is intended to rectify the substantial cutbacks which M&I customers endured during the most recent drought. The SCVWD is a party to this revised M&I policy.

The third column of the table displays the District's supply estimate for an "average critical dry year." Local supplies are estimated at 149 KAF, or 31% less than in an average year. Imported supplies tally at 190 KAF, or 25% less than in an average year. Overall then, in a critical dry year, the District still expects to receive 339 KAF of water. To cover this shortage, 5-15% conservation would be required from the District's customers (note that the demand figure is based on many years of data, including the most recent drought). That drought was severe enough to induce substantial conservation, which may cause a dramatic decrease in average demand over time.

The fourth column of the table describes the supplies actually available in 1991, the driest year of the most recent drought. (Staff simply accepted a dry-year estimate for local supplies in view of the lack of that specific piece of information). As reported in "Regional & Local Water Supply Issues" May 1992, San Jose Department of City Planning, the District received only 146 KAF of water from its contracts with the State Water Project and the Central Valley Project. That is 23% less than the District's estimate of dry year supply, 43% less than the District's estimate of average year supply; and 55% less than that for which the District has contracts, or entitlements. But since 1991 the District has improved the reliability of CVP water by adding an M & I shortage provision.

Several issues regarding supply information remain unclear or unexplained. The extent to which the District was able to "bank" groundwater prior to the drought, which was used to supplement the constrained imported supply, has not been evaluated. The longer-term issue of the relationship between the District and Hetch Hetchy, whether the District will assume control of this supply for all county retailers through a master contract, and the resolution of the City of San Jose being designated as a "permanent" customer of the San Francisco Department of Water, is uncertain. And the relationship between demand projections and water "availability" (or supply constraints) is unexplained. Further questions on that issue are raised in the subsequent discussion on demand.

### ***Water Demand***

The table below (Table 2: Water Demand Estimates) presents the limited data available regarding SCVWD's water demand. As shown, historical average demand has been estimated at 400 KAF per year. In 1991, the most severe year of the most recent drought, demand was reduced by 25% to 300 KAF, the result of substantial customer conservation.

TABLE 2: WATER DEMAND ESTIMATES  
(All figures in 000's of Acre Feet)

<u>Historic Demand</u>	<u>1991 Demand</u>	<u>Estimated Demand</u>
		<u>2020</u>
400	300	350-500 <sup>C</sup>

Source: Verbal communication with SCVWD

C: See Attachment C: SCVWD graphics presented to City of San Jose Transportation, Development & Environment Committee, 8/24/95

The final column displays the range of potential estimated demand as adopted by the SCVWD Board for the year 2020. The demand range is bounded by two different visions of future water use behaviors. The low end, 350 KAF per year, is based on 1991 water use patterns. This projection assumes a continuation of the drought demand reductions measures and slow business climate of 1991. The high end of the range, 500 KAF, assumes a return to pre-drought water use behaviors, but would accomodate substantial new development throughout San Jose, in accordance with the General Plan.

### ***Demand Components***

Water in California has popularly been described as an "80/20" split between agricultural and urban uses. This split, however, is true only if water used to redress environmental hazards is excluded. The details below show how the distribution of water, by use, changes at the statewide level when environmental mitigation is included. The figures are for the state for the "normal" year of 1990.

TABLE 3: DISTRIBUTION OF WATER BY USE

<b>Agriculture/Urban Water Usage, as popularly understood</b>			<b>Statewide Distribution, With Environmental Mitigation</b>	
Net Total	34 MAF	100%	62 MAF	100%
Agriculture	27.2 MAF	80%	27.2 MAF	44%
Urban	6.8 MAF	20%	6.8 MAF	11%



Environmental	---	---	28.0 MAF	45%
BJ Miller Seminar, "The Management of Water in California"; June 1995				

This exercise points out how drastically one's understanding of water demand can be altered by including demand for the environmental component. This component is particularly important as it is federally mandated, that is, provision of such waters takes precedence over provision of water for agricultural or urban use. In years of constrained supply, local users throughout the state may be negatively impacted.

At the local level, the SCVWD has indicated that average demand for water was 400 KAF per year. To the best of staff's knowledge, that figure does not include any allowance for environmental mitigation on a county-wide basis, nor does the 300 KAF estimated for 1991, nor the projection for 2020.

To date, the District has not released any estimate of how much water is used for mandatory mitigation in any year. If the Santa Clara Valley demand for water for environmental mitigation were as intense as the demand statewide, (Highly unlikely, but unknown at this time), the District's expected mismatch between supply and demand by 2020 could be considerably worse than anticipated.

In addition to needing clarification on the District's use of water for mandatory mitigation, staff has been informed that the District has identified a customer-based desire for environmental enhancement above and beyond that which is mandated, such as creek restoration. The Board's policy has been to avoid or minimize adverse impacts to habitat or ecosystems with their projects.

This prioritization creates an opportunity for collaboration between the District, the City, and other stakeholders. It will be to the advantage of all to agree on the trade-offs which will be necessary to allow environmental enhancements (and environmental mitigation) to occur in times of constrained water supply and/or development booms. To accomplish this, it will be necessary to start with differential demand projections by type of user and by land use development potentials. That is, projections of demand for potable and nonpotable water for agriculture, commercial, residential and other uses must be differentiated. Without

differentiation of projections by component of demand, it is not possible to analyze alternative development scenarios for the City, should it become necessary to limit or stage development because of temporarily or intermittently constrained resources, such as water.

### ***Drinking Water Quality Protection***

The Santa Clara Valley Water District, as a wholesale water supplier, collaborates with its water retailers (various municipal water retailers and privately and investor-owned retailers) to ensure the safety of the water supply. As a wholesaler, the District is responsible for the safety of the treated water it supplies to the retailers. However, ensuring that the potable water supplied to the community meets state and federal drinking water standards is the responsibility of the retailers. A broad range of drinking water quality issues needs to be addressed under both the federal and state Safe Drinking Water Acts, and continued cooperative work among the SCVWD, City of San Jose Municipal Water System, Great Oaks Water System, and San Jose Water Company is encouraged, to ensure that San Jose residents have safe water to drink.

### ***Wastewater Discharge Impacts***

The discussion of water quality in this section of the report refers to that water found in the Bay and in local streams, creeks, rivers and groundwater. The yardsticks used to measure the environmental impact of the Plant's discharge to the Bay are both the composition of the wastewater effluent as it leaves the treatment Plant as well as the volume of that flow.

The major goal of the Clean Water Act is to protect beneficial uses of the receiving waters. The fact that flow is such an issue for the Water Pollution Control Plant's discharge is due to the potential impact of freshwater flow on saltwater marshes, which are habitats to two endangered species. The fact that flow and water quality have the potential to impact beneficial uses is a major reason for an integrated approach to environmental management. Both flow and water quality must be reviewed together in order to better make decisions that result in net environmental benefits.

The San Jose-Santa Clara Water Pollution Control Plant has a design capacity of 167 million gallons per day (mgd) and discharges treated wastewater into San Francisco Bay at Artesian Slough. State regulatory agencies have determined that such "freshwater" discharges have degraded the adjacent environment by converting saltwater marsh into freshwater and brackish marsh, thereby threatening the habitat of two endangered species. State Board Order WQ 90-5 would have limited discharge from the Plant to 120 mgd. In order to address regulatory concerns, an Action Plan was adopted by San Jose and approved by the Regional Water Quality Control Board. The Plan's goal is to protect endangered species habitat by reducing the amount of treated effluent (freshwater) discharged to south San Francisco Bay while still allowing for full use of Plant capacity as required to meet growth projections based on the City's General Plan.

With regard to effluent quality of the discharged wastewater, the Regional Board sets effluent limits based on a standard for the receiving water that is designed to protect beneficial uses. The past 25 years have been spent controlling those pollutants that cause the most obvious problems. Through increasing expenditures by federal, state and local entities, the quality of the wastewater treatment process has improved to the point that significant gains have been made in protecting the receiving water.

As the earlier problems were being solved, the emphasis shifted to other pollutants of concern when protecting beneficial uses. The late 1980s brought increased pressure to control heavy metals such as copper, nickel and lead, which the treatment plants were not originally designed to remove.

Efforts to control pollution in the last 20 years were effective in large part because large, identifiable sources (point sources) were rather obvious. Awareness has grown of other sources of pollutants than those discharged to the sanitary sewer system. To fully protect the beneficial uses of a water body, it became apparent that more varied, and less obvious sources of pollutants (nonpoint sources) must be controlled. The City has numerous programs designed to reduce the pollutant loads from such sources as the stormwater sewer system and urban runoff. This leads to the inevitable question of where to concentrate limited resources.

Currently, both the United States EPA and the State Water Resources Control Board are beginning the process of evaluating how best to protect an entire watershed or ecosystem. Our own situation requires that programs designed to ensure clean water are related to their respective costs and impacts on the environment. Only through a concerted effort to control all sources will there be additional gains in water quality.

### **Other Water-Related Trends**

#### ***Water Recycling***

In 1989, the City established the South Bay Water Recycling Program. The purpose of this program is to divert 21 million gallons per day of treated wastewater from the San Jose-Santa Clara Water Pollution Control Plant. The development of wastewater recycling facilities and related distribution systems is the start of a new trend in the City's water picture, firmly linking water supply and wastewater treatment issues and programs. The near-term availability of nonpotable water (by 1998) will offset a small portion of the demand for potable water currently used for outside irrigation purposes. This is an appropriate step toward decreasing the wastewater flow into the Bay and has the added benefit that it will add another source of supply for the community. Forecasts of the potential amount of recycled water range from 51-72 KAF.

Future projections of water supply and demand may now be distinguished as potable and nonpotable. The South Bay Water Recycling Project could be further developed by taking advantage of opportunities to expand the service area for landscape irrigation and the supply of high-quality recycled water for (indoor) industrial processes.

### ***Funding for Flood Control***

Recently there has been a trend to eliminate or decrease federal and state flood control program funding. There is a move to push the funding of these programs to the local level. The District has limitations on one local source of flood control funding, benefit assessments. The costs of resolving these problems will require new solutions on both the part of the District and the cities..

### ***Water Conservation***

Water use in San Jose has been the focus of water conservation efforts since the late 1970s. In 1987, California entered one of the most severe droughts in recorded history, prompting improved water-use efficiency in all sectors. In 1987, the San Jose community was using about 140 gallons per day per person. At the height of the drought, the rate had dropped to 93 gallons/day/person. Water use, however, has risen since then. In 1994, water use without installed conservation measures was projected at 115 gallons/day/person. Because water demand has been reduced by the installation of water-conserving hardware, water use in 1994 has been reported at 100 gallons/day/person.

A specific emphasis for the City's water conservation plans has been reflected in two large-scale programs. The first was a residential showerhead replacement program during the late 1980s, which produced about 3.4 million gallons per day in flow reduction. The Ultra Low Flush Toilet program during the 1990s is expected to bring about 3 million gallons per day in flow reduction. Future water conservation and flow reduction strategies will focus on more efficient hardware product replacements, outdoor water-efficient landscaping, conservation pricing structures, and new uses of recycled water.

### ***Nonpoint Source Pollution Control***

There is increased emphasis being placed on development of City-wide nonpoint source pollution control programs. It is currently estimated that up to 85% of the pollutants that reach the Bay originate from nonpoint sources. To date, the bulk of City efforts towards meeting water quality standards (as required by the EPA and the State Water Quality Resources Control Board) have focused on the removal of point-source pollutants. It is now critical that nonpoint source pollution become the focus of local, state, and federal policy and programs. This will be a difficult transition, as the “target” of such policies is no longer the “them” we know as business and industry. The target for nonpoint source pollution prevention is much broader -- institutions, general public, businesses and industry. Even more critical is to determine what programs should be instituted that will impact the overall watershed. The traditional focus on a point sources must be superseded by ecosystem protection programs that take into account all sources of pollution and that produce net environmental benefits.

### ***Recent Water and Land Use Legislation***

Two California bills, Senate Bill 901/Costa and Assembly Bill 1845/Cortese were chaptered in the 1995 legislative session. SB901/Costa (Water Supply Planning) requires that the land use element and the conservation element of General Plans reflect the water supply and demand impact of new projects over a certain size. The main focus of this bill is to ensure that future development is not approved without due consideration given to the amount of water available, its quality, or the physical delivery system needed.

AB 1845/Cortese (Urban Water Supply: Water Service Reliability Assessment) requires every urban water supplier to include, as part of its urban water management plan, a prescribed water supply and demand assessment of the reliability of its water service to its customers during normal, dry and critically dry water runoff years (previously, this requirement only applied to suppliers with over 3,000 customers.)

The other bills dealing with the relationship between future growth and water supply planning that did not pass this session but will be carried over to the 1996 session are AB584/Rainey

(Land Use: Water Planning Information), AB1332/Sweeney (Environmental Quality: Public Water Systems) and AB1005/Cortese (Local Public Water Systems: Service Needs).

## **Compliance Programs**

### ***Clean Bay Strategy***

The City faces the challenge of preserving one of the most important estuaries in the United States adjacent to a socially and economically complex urban community. Approximately one million residents and 16,000 commercial and industrial businesses, including many of the leading high-tech firms in the country, are located within the service area of the San Jose-Santa Clara Water Pollution Control Plant. As the agency charged with operating the Plant according to the terms of its National Pollutant Discharge Elimination System (NPDES) permit, the City is responsible for limiting treatment Plant discharges of toxic pollutants to South San Francisco Bay.

To protect beneficial uses in receiving waters (for San Jose, the San Francisco Bay), the City has advanced beyond traditional “end of pipe” controls, to a more holistic strategy of pollution prevention and reduction from all sources. By controlling pollution from all sources, including nonpoint sources such as stormwater runoff, the City will be able to improve the quality of water in the South Bay more cost-effectively than through tighter industrial regulation alone.

The City’s Pollution Prevention Strategy for a Clean Bay is based on five guiding principles:

- Holistic approach to environmental restoration
- Cost-effective environmental protection
- Regulatory certainty for the City and industrial dischargers
- Sound science and data collection
- Environmental equity.

### ***Stormwater Management Plan***

Considering the large percentage of pollutants reaching the Bay from nonpoint sources, a key focus of the Clean Bay Strategy is on nonpoint source pollution. Along with 14 other agencies in the county, the City has developed a Storm Water Management Plan (SWMP) for the period of August 1995 to June 2000 to address storm water and nonpoint source pollution. In addition



to being a crucial part of the City's holistic strategy of pollution prevention, the SWMP is also the City's primary plan for compliance with our Municipal Storm Water NPDES Permit.

The Storm Water Management Plan includes an implementation section that is composed of 10 program elements.

- Program Management
- Monitoring
- Public Information and Participation
- Watershed Management Measures
- Industrial and Commercial Dischargers
- Annual Reporting and Evaluation
- Public Agency Activities
- Metals Control Measures
- Illicit Connection/Illegal Dumping
- New Development and Construction

In order to successfully implement a comprehensive nonpoint source program, the City has joined with 13 other municipal agencies and the Santa Clara Valley Water District to form the Santa Clara Valley Nonpoint Source Pollution Control Program. Through the NPS Program, the City is able to work with the other agencies to jointly complete research, monitoring, and other projects in an efficient and consistent manner. While most of the research projects and some of the implementation projects are being implemented by the Program, the bulk of the SWMP implementation is being carried out at the City level due to the municipal nature of the projects.

### ***San Jose Action Plan***

In 1991, the City proposed the San Jose Action Plan to protect and restore the endangered species habitat in lieu of the State Water Resources Control Board (SWRCB) imposing a dry-weather flow cap of 120 million gallons per day (mgd). In October 1991, the Regional Water Quality Control Board (Regional Board) approved the Action Plan which not only continued the City's 1986 Flow Reduction Strategy, but also established a voluntary plan for reducing flows discharged to the South Bay as directed by the SWRCB. The Action Plan was designed to keep average dry weather effluent flows under 120 mgd until a water reclamation system came on line.

In October 1993, the Regional Board incorporated the Action Plan into the NPDES Permit for the San Jose-Santa Clara Water Pollution Control Plant, making the Action Plan's flow reduction commitments mandatory. On an annual basis, the City is required to submit a status report on compliance with the Action Plan to the Regional Board and the other environmental organizations that are signatories to the Agreement.

The Action Plan consists of three elements: 1) water conservation and source reduction; 2) wastewater recycling; and 3) wetlands mitigation.

## **The City's Water Programs**

### ***Environmental Services Department***

The Environmental Services Department (ESD) “is committed to preserving a vibrant quality of life for the San Jose community in which public health and a sound economy are sustained by a healthy environment. As a Department, we are partners with area residents and businesses in promoting the efficient use and reuse of all the Earth's resources. Through our policies and programs, we support our community's efforts to act responsibly toward future generations.”

ESD oversees many programs related to water and wastewater, both in the areas of supply, flow and quality. Detailed information on these programs is given in Appendix A.

### ***Planning, Building and Code Enforcement Department-General Plan Policies***

The General Plan contains a number of policies that address water-related issues of environmental quality, and the City recently adopted a Policy designed to protect existing riparian corridors and to restore impacted corridors. Policies to preserve the Bay and Baylands are in place. These policies call for the restoration of diked wetlands, including salt ponds, to their historic and natural state. The policies would preclude any development which would create an adverse impact to the San Francisco Bay National Wildlife Refuge. The General Plan also contains a number of policies dealing with water resources. These policies address water conservation, water recycling, hazardous material controls and the protection of surface and ground waters by increased NPS pollution control.

The General Plan addresses the issue of water supply in a limited fashion. Historically, the City has simply accepted the SCVWD's projections that water would be available when needed to serve new development. Consequently, no provisions exist for the allocation of potentially inadequate new supplies to new developments on the basis of their overall benefit to the City. There are no water “level of service” policies analogous to those for transportation and sewage capacity. (See Appendix B for further information on water-related General Plan policies.)

### ***Public Works Department***

The mission of this department is to provide services to customers and residents in a timely and equitable manner. Within the Department, the key programs related to water include the Development Services Program, Design & Construction - Capital Improvement, and Engineering Services. (See Appendix A for further information.)

### ***Department of Streets and Traffic***

The Mission of this department is to ensure that the City's investments within its street right-of-ways are effectively and efficiently maintained; to operate the City's traffic system in a manner that is sensitive to community concerns, minimizes accidents, and provides for the efficient movement of vehicles and pedestrians; and to effectively manage the City's parking enforcement and citation programs. Within the department, the key program related to water is the Street Services Program (See Appendix A for further information).

### **III. Key Issues and Challenges**

#### **Existing Risks and Threats Related to Water**

One of the major water risks to the City is the uncertainty on the availability of long-term water supplies needed to support both the City's current level of economic activity and prosperity and future growth. San Jose's drinking water is supplied via a water supply system that consists of watershed lands, reservoirs, streams, groundwater recharge areas, and distribution and treatment facilities. San Jose citizens and businesses obtain the vast majority of their water supply from the Santa Clara Valley Water District (the local wholesaler) by way of public (one) and private (two) water retailers.

Less than half of the City's water supply come from local sources. In years with normal rainfall, over half of the District's supplies are imported. This imported water is obtained from three sources: the State Water Project via the South Bay Aqueduct; the San Francisco Water Department's Hetch Hetchy Aqueduct and the San Felipe division of the Federal Central Valley Project. In the driest year of the most recent drought, nearly 90% of the City's water was imported. Note that this was used both to satisfy that year's demand as well as to replenish groundwater storage.

Imported water for the area is delivered under contracts with the state and federal water projects, as well as with the City and County of San Francisco's Hetch Hetchy project. In drought years, water deliveries can be constrained to a "pro rata share" of that to which the District is contractually entitled. Note that in average years, the state and federal projects may not produce their anticipated yield (thus the District's full share) because neither project has ever been fully implemented. The City and the District need to work together to increase the reliability of these contracts, and where risk is identified, to mitigate for this uncertainty.

The second set of major threats to the City's ability to implement environmental goals are embedded in a range of water-related issues such as wetlands, habitat, wildlife, and endangered species concerns.

The first of these issues involves the conversion of South Bay salt marshes to brackish marshes caused by the high volume of freshwater effluent from the San Jose-Santa Clara Water Pollution Control Plant. This marsh conversion has contributed to the loss of habitat for the California clapper rail and the salt marsh harvest mouse, both species currently on the endangered species list. Although the City has agreed to mitigate for past salt marsh conversion, there is a need to look at the wetlands issue more holistically. Policies and programs need to emphasize the interrelationship of salt, brackish, and freshwater marshes and riparian areas as it impacts the ecosystem as a whole. There cannot be an overemphasis on one marsh type to the exclusion of the others. Programs designed to protect the environment must be adaptable and resources allocated in proportion to the net environmental benefit that can be achieved.

The second issue concerns the loss or potential loss of freshwater wetlands habitat caused by continuing development as the City “builds out” as envisioned by the General Plan. This wetland loss could impact special status freshwater wetland related species. Proposed wetlands policies will address these issues.

### **Economic Issues and Impacts**

The relationship between environmental quality and a sound economy is both complex and delicate. The Santa Clara Valley’s climate, physical beauty, abundant resources, and fertile soil were what originally attracted people to locate here, when agriculture was still a major industry in the Valley. Those characteristics contributed to a high quality of life which further attracted nonagricultural development and residential development. The economy has now shifted far away from an agricultural base, yet people still relocate here because of the perceived quality of the Bay Area environment in general, and the Santa Clara Valley in particular.

One of the bulwarks of that attractive environmental quality is a guaranteed supply of high quality water. Both the supply and quality of water are subject to variability at this time. It is important that the city conserve and maximize the use of local resources through water conservation and water recycling, while recognizing that imported water will continue to be a major portion of the water supply mix.

Another aspect of the optimal water supply picture would be that water uses would be segmented according to need. For example, in the biggest of pictures, it is inefficient and inequitable to use drinking water to wash away human waste. It is an artifact of history that this situation occurs, and it is unlikely to change via retrofit. The mandatory installation of low-flow toilets is an important step to minimizing the impact of such use on the drinking water supply. However, there is no technical reason why new development could not include recycling gray water for use in flushing toilets.

Drinking-quality water has traditionally been used for outside irrigation as well. Current landscaping practice requires large quantities of water and chemicals which can also yield elevated quantities of yardwastes and nonpoint source pollutants. This is and will be changing, with the onset of availability of recycled water for commercial and industrial uses. Drought-tolerant landscaping is an important step toward minimizing the impact of residential irrigation use. There is the potential, however, for new residential development, especially those near the new recycled water system, to be served with recycled water for outside irrigation.

A final example would be the use of recycled water for industrial processing. Industry should be encouraged to use the highest quality recycled water for indoor uses, that is, in their industrial processes. The level of treatment necessary to use the recycled water for outdoor use may be sufficient for conversion to indoor processing use as well. Additional pretreatment could also provide a cost-effective method of diverting demand away from potable water use.

The economic impacts of such changes, both for residential and industrial customers, would likely be minimal on a per person and per business basis. The effect of such changes, however, could be the beginnings of stabilizing the overall demand for potable water, which would be extremely beneficial for the local economy, and allow for much greater certainty regarding the rate of growth this economy could support.

### **Water Policy and General Plan Growth Issues**

One purpose of policy statements is to facilitate the implementation of the General Plan, which serves as the comprehensive growth/development blueprint for the City. In the case of water supply, there is a direct link between the predictable availability of potable water and the ability of the City to accommodate new residential and commercial growth. The District, through their Integrated Water Resources Planning process is working to evaluate options for sufficient supplies of water to accommodate the land development capacity outlined in the General Plan. According to Santa Clara Valley Water District staff, reliability of future water supplies has been enhanced by the District's participation in the recently signed "Monterey Agreement," which provides for sharing of water supplies among wholesalers in future dry years. However, now may be the time to be absolutely certain we understand the assumptions on which those assurances are based, the "Monterey Agreement" notwithstanding. This is especially relevant in light of the most recent drought's impact on the potable water supply because even such an agreement cannot guarantee deliveries during a prolonged statewide drought.

One of the most significant deterrents to industrial and commercial growth and expansion is the unpredictability of required raw materials. Water is just such a raw material, and its availability must be considered in allowing industrial and commercial development in San Jose in the near term. The timing of the most recent drought and recession in Silicon Valley was propitious in that there was no overwhelming increase in demand for water (which was not available) because business was in a slump. Business is no longer in a slump *and* there currently is no drought. This is, therefore, precisely the time to implement a framework to guide development because of a lack of water.

There could be a point in the future where water supply limitations would begin to affect the City's ability to continue buildout of the planned land uses as adopted in the General Plan. As stated in the City's General Plan, "natural resources are not inexhaustible commodities...but valuable assets to be judiciously used and wisely managed for the benefit of present and future generations." The General Plan stresses the intent to balance resource conservation and urban development, so as to maximize the achievement of environmental economic and social objectives. Educating the public is key to a greater understanding of the long-term issues of water supply and its effect on future growth.



The interaction between water quality policy and the General Plan is similarly complex. As development continues, the volume of flow into the wastewater treatment facility increases, as does the effluent to the Bay. There are regulatory constraints on the volume, as well as the quality of that effluent. The balance between allowing development to continue unconstrained and the capacity of the treatment plant to process and the Bay to accept additional unconstrained amounts of wastewater is not fully understood at this time, and requires ongoing examination.

### **Public Opinion about Water**

In March 1994, the City commissioned a telephone survey of 500 randomly selected San Jose residents to obtain opinions about the San Francisco Bay. Most fundamentally, the survey found very high levels of concern about protecting the environment, specifically about pollution of the San Francisco Bay. Pollution of the Bay by metals such as nickel and copper is clearly an issue that residents feel should be a high priority for government and industry to address; moreover, it is a problem that sizable majorities of residents say they are willing to help solve through changes in their personal lifestyles, including paying higher sewer fees if the money is designated for this purpose.

Fully 73 percent of the respondents felt that general pollution of the environment was a serious problem in San Jose, a level of concern exceeding even that expressed by respondents about crime in their local neighborhoods.

There is very evident and strong willingness expressed by San Jose residents to get involved in solving this problem. Ninety-three percent agreed -- including 58 percent who “strongly agreed” -- with the statement “I don’t mind making some changes in the way I live to help clean up the Bay.”

Specifically:

- Eighty-four percent said they would be willing to cut back on water use by 25 percent to reduce Bay pollution (47 percent very willing, 37 percent somewhat willing).

- Ninety-two percent would be willing to use non-polluting household products, “even if they cost a bit more” (53 percent very willing, 39 percent somewhat willing ).
- Sixty-three percent would pay seven dollars a year more in their average sewage bill if the money were spent on preventing pollution of the Bay (33 percent very willing, 30 percent somewhat willing).

A survey on water supply issues, conducted in September 1994, indicated that:

- Forty-one percent believed that there is not enough water to meet our current needs.
- Over the next 25 years, respondents believed the cost of water would be much more expensive (62%), and much more difficult to obtain (52%).
- When asked about areas that agencies should pursue, respondents focused on required conservation for residents and businesses, and water reuse strategies.

### **Regulatory Climate**

Clearly, our country is in the midst of a critical transitional period for environmental policy. The concept of environmental conservation has been firmly rooted within our political system for over a century. The modern era of environmental protection began in 1970 with the first Earth Day, the creation of the EPA, and the passage of landmark legislation designed to protect the environment.

Since the early 1990s, growing dissatisfaction has emerged with the continual expansion of environmental regulations. Businesses often complain that federal, state and local regulators establish overly stringent standards that require expenditures disproportionate to the risks involved. Small businesses often see their livelihoods threatened by regulatory and paperwork burdens. Unfunded mandates imposed upon state and local governments have placed extreme pressures upon already strained budgets.

Past “command and control” regulations were powerful in the previous battles against environmental degradation, but this style of mandating change can be inefficient. Furthermore, they can discourage innovation in pollution control methods and can ignore important differences among individuals, firms and regions.

The mood in Congress is now one of heightened sensitivity to environmental and regulatory compliance burdens, with proposed revisions of many of the nation's environmental laws to provide regulatory relief to businesses and individuals. The current push to revise environmental regulation is very much in keeping with the overall conservation philosophy of moving policy decisions from the federal government to the states, localities and individuals.

The challenge in the future will be to reinvent environmental regulations, not undermine them. American citizens, in poll after poll, cite their determination to achieve high standards of environmental quality. Regulations need to be designed to achieve an overall benefit to the regional environment by prioritizing risks and resources. In addition, regulations must be flexible enough to adapt their goals based on the most reliable knowledge and data. Such regulations will minimize costs to individuals, businesses, and governments while protecting public health and the environment.

The City of San Jose, with its Clean Bay Strategy, has embraced these concepts of net environmental benefit and adaptive management. The Strategy was developed to provide a comprehensive, creative and cost-effective approach toward attaining compliance with environmental regulatory requirements, while maintaining program leadership and allowing the community to preserve its highly robust economy. Resources for programs in the Strategy are allocated based on priorities established by sound science. Resources are shifted between programs when data collected indicates that priorities need to change.

Faced with increasingly strict environmental requirements and with diminishing funds, the Clean Bay Strategy seeks to overcome the "one-size-fits-all" mentality, emphasizing "win-win" solutions for all stakeholders, while providing environmental protection and restoration that is reasonable, beneficial and economically sound. The benefits resulting from this strategy will enable cost-effective environmental management, equitable reductions from all major sources, decision-making based on sound science, regulatory certainty to our industrial ratepayers, and ultimately improve the quality of the South Bay ecosystem.

The challenge is to modify the traditional approach to environmental protection, which has tended to focus on media-specific issues in a "command and control" atmosphere. What is needed is an ecosystem protection approach that enables integrated programs to be defined based

on the knowledge that the continued protection and restoration of ecosystems requires a different approach. This approach must be consistent with the concepts of net environmental benefits and adaptive management. Additional environmental gains can best be achieved by reducing sources of stress while at the same time addressing socioeconomic needs on a sustainable basis.

### **Legislative Climate**

The political climate is presently quite sympathetic to the causes of environmental regulatory relief and the development of laws and regulations that benefit both the environment and the economy. Promoting and advocating legislation that results in the regulatory shifts discussed in the Regulatory Climate section of this document is therefore key to effectively achieving the goals of this Water Policy Framework.

The City promotes its water-related legislative objectives in a number of ways, all of which center on communicating with a network of resources, such as: the Mayor's and City Manager's offices; departmental staff members; local, state, and federal agencies; professional member associations; state and federal representatives and their staff; and the City's lobbyists in Sacramento and Washington, DC.

This network keeps city management and staff informed on major legislative issues, allowing us to contribute input in the early stages of legislative development, develop positions, comments and language for specific pieces in the legislative referral process, present briefings on legislative issues and their associated program impact, and produce written and oral testimony for legislative hearings. In addition, the City works collaboratively with regulatory agencies to facilitate preferred issue resolutions, thus reducing the need for legislative solutions.

The City has supported and advocated legislation in a variety of water-related areas in the past. We intend to continue to do so in order to make desired regulatory and legislative changes a reality. The relevant areas include: water recycling; water conservation; nonpoint source identification and regulation; pollution prevention; continuance of state revolving loan funding for wastewater collection and treatment; watershed management; ecosystem protection; flood

management; reasonable, flexible and scientifically-based drinking water and water quality standards; equitable allocation of water and its associated costs and environmental responsibilities; involvement of stakeholders in land use planning and rate setting rules; federal funding of costly mandates; streamlining the regulatory reporting and permitting process; and technological and scientific research in the areas of water management, treatment and standards.

### Privatization Issues

As it has gained popularity among all levels of government across the country, privatization has been applied to a number of services, many of which were previously off-limits to the private sector. Full privatization (the sale of a public asset) and long-term franchise agreements are two models of privatization. More commonly, selected services or functions related to water and wastewater operations are contracted out to private operators.

There is a City Council-adopted policy on contracted services that provides guidelines to govern decisions related to the use of non-city employees to deliver city service functions. The issue of privatization is being considered more and more on the municipal level. Because of this, San Jose's City Manager is preparing a white paper for the City Council that will outline the current trends, models, considerations and policy implications of privatization.

## IV. WATER POLICY FRAMEWORK

### Environmental Credo For The City

The City of San Jose is committed to the concept of Sustainability in its management of environmental issues. Within the City's General Plan, the City's Sustainable City Major Strategy is a statement of San Jose's desire to become an environmentally and economically sustainable city. A "sustainable city" is a city designed, constructed, and operated to efficiently use its natural resources, to minimize waste, and to manage and conserve them for the use of present and future generations. The following eleven guiding principles constitute an "environmental credo" which should direct future City decisions on environmental matters in general.

- San Jose embraces the concept of Sustainability.  
*... In short, this means the city should work to meet its existing needs without compromising the ability of future generations to meet their needs.*
- San Jose recognizes the mutual dependence of environmental quality and continued economic health.  
*... Economic vitality and environmental protection are not mutually exclusive. A healthy environment is integral to the long-term economic interests of our city. Likewise, a healthy economy will allow the City to champion and implement the programs and projects that will maintain and enhance our local natural environment into the future.*
- San Jose is committed to environmental equity.  
*... The City's environmental efforts must reach all segments of the community. The City should work to ensure that environmental requirements do not place inordinate and unfair burdens on any one sector of the City.*
- San Jose prefers prevention over cure.  
*... The City favors a prevention oriented approach to environmental management, rather than corrective action after the fact.*
- San Jose recognizes that an aware, responsible and involved community is the key to our success.

... *The City's environmental efforts will fall short unless individual citizens, community-based groups, and businesses are involved.*

- San Jose recognizes its role and responsibility in the regional and in the global community.

... *The City must continue to recognize, and act upon, the relationship between local environmental issues and the regional and global environment.*

- San Jose must practice what it preaches.

... *Few things raise as much ire as when government entities fail to meet the same standards and regulations they impose on others. The City must avoid this double standard and act as a leader in environmental management.*

- Since San Jose cannot do everything at once, we must ensure that we do the right things first, and do them well.

... *The City must develop and continually reevaluate its environmental priorities to ensure that it is making the best possible investments in San Jose's future.*

- Reducing risk is a main focus of San Jose's environmental policies and programs.

... *The overarching goal of all the City's environmental actions and investments is to reduce the risks environmental problems pose to human health, the environment, the economy and the quality of life.*

- San Jose recognizes the value of continuing leadership in planning and implementing innovative and proactive environmental policies and programs.

... *The City understands and values the encouragement it has received, from individual San Jose residents to international organizations, as a city that manages our environmental affairs well. Being a municipal environmental leader has value in that it has given residents, businesses and City employees a renewed sense of civic pride which fuels our desire to solve all our urban problems with enthusiasm, determination and cooperation.*

## **Mission**

A mission describes an organization's core purpose. For San Jose, our mission as regards water is to ensure:

- A healthy, reliable and adequate supply of high quality water;
- Efficient, economic and sustainable use of water supplies;
- High quality wastewater discharge into the San Francisco Bay;
- The protection of public health and safety;
- The preservation and enhancement of habitats, ecosystems and endangered species; and
- The protection of surface and groundwater resources.

## **Goals**

In order to accomplish our mission, our water-related goals are to work cooperatively with our community and other agencies to:

- Ensure an adequate and high-quality water supply to meet current and future needs;
- Achieve a balance between public health, a sound economy and environmental quality;
- Minimize pollution to the potable, nonpotable and storm drain water systems;
- Ensure the highest, best and most efficient use of water;
- Maintain and re-establish habitat and biological diversity of wetlands areas, riparian corridors and water bodies in concert with flood control, recreation and public use policies.



## Strategic Directions and Water Policies

In charting the City's course to achieve its water goals, several strategic directions and supporting policies were developed to provide the City with a basis for consistent decision-making and resource allocation. These strategies and policies are based on today's knowledge and needs. However, their adoption and implementation will be dynamic and ongoing. As a City, we will work to make the right choices now, and be prepared to revise our strategies and policies in an orderly and thoughtful manner in the future. As progress is made, and as the world around us changes, we will adjust our course if necessary to achieve our goals for water in San Jose. The strategic directions and policies to achieve the City's water goals are shown below.

- Ecosystem Protection
- Water Supply and Use
- Wastewater Treatment
- Pollution Prevention
- Education and Involvement
- Interagency Cooperation
- Advocacy

Specific Policies for these strategic directions include:

### A. Ecosystem Protection

- A1. The City shall protect, maintain and restore the ecological integrity of its ecosystem; including wetlands, riparian corridors and other water bodies.
- A2. The City shall promote a watershed/ecosystem approach to regulations at the regional, state and federal levels to emphasize programs that produce net environmental benefits.
- A3. The City shall promote data gathering and analysis that is necessary to assess ecosystem priorities, and utilize this data within an adaptive management process.
- A4. The City shall prioritize resource allocation based on an ecosystem approach, including but not limited to weighing the cost-effectiveness of pollutant reduction in point sources versus nonpoint discharges and effluent trading promotion.
- A5. The City shall acquire, restore or create wetland areas and riparian areas.
- A6. The City shall preserve habitat suitable for species of concern, including but not limited to threatened and endangered species.

## **B. Water Supply and Use**

- B1. The City of San Jose shall work cooperatively with the Santa Clara Valley Water District, and other partners and stakeholders to ensure that our community has an adequate, reliable, safe, economically and environmentally sound supply of water, consistent with its adopted General Plan.
- B2. The City shall ensure that water services and supply are available to areas approved for development.
- B3. The City shall promote and encourage the most efficient use of water, through various methods, such as conservation and the recycling of water.
- B4. The City shall ensure that development policies support and promote the use of recycled water.
- B5. The City shall require water efficient practices in equipment and processes of all new development.
- B6. The City shall require water efficient outdoor landscaping and irrigation in all new development.
- B7. The City shall collaborate with the Santa Clara Valley Water District, Hetch Hetchy Water System, and water retailers in their roles of water supply management and groundwater protection.
- B8. In order to ensure and plan for adequate and safe water, the City shall maintain its role as a water retailer through ownership of a water utility.
- B9. The City shall promote and employ water conservation pricing in order to achieve an efficient and economical use of the water supplies.
- B10. The City will encourage water suppliers to provide projections of supply and demand segmented by type of water (potable and nonpotable) and by use (residential, agricultural, environmental mitigation, etc.).
- B11. The City shall link commercial/industrial flow reduction incentives with water supply and pollution prevention programs.

## **C. Wastewater Collection and Treatment**

- C1. The City shall establish procedures that encourage efficient use of water and reduce sewage flows and toxic pollutants.
- C2. The City's wastewater collection and treatment facilities and programs shall be operated and maintained to optimize our treatment processes.

- C3. The City shall produce high quality treated wastewater for discharge into the Bay.
- C4. The City shall produce high quality recycled water for use by the community.
- C5. The City shall maximize the use of byproducts produced by the wastewater treatment facility.

#### **D. Pollution Prevention**

- D1. The City shall identify, address and prevent pollution at its source.
- D2. The City shall promote grading standards that minimize soil erosion.
- D3. The City shall work with public and private entities to protect valuable local groundwater resources from contamination and overdraft.
- D4. The City shall assure that any facilities to be located in sensitive groundwater recharge areas are appropriately designed and constructed to adequately protect the resource.
- D5. The City shall encourage all residential and non-residential entities to meet Best Management Practices and Reasonable Control Measures for environmental protection.
- D6. The City shall participate in the protection of the regional aquifer from contamination and overdraft.
- D7. The City shall link commercial/industrial flow reduction incentives with water supply and pollution prevention programs.
- D8. The City shall promote Best Management Practices and reasonable watershed controls for the protection of reservoir water quality for the reservoir watersheds within the City's sphere of influence.

#### **E. Education/Involvement**

- E1. The City shall provide multiple opportunities for involving and obtaining input from the public in decision-making on water policies and issues.
- E2. The City shall provide information and education to the public on their roles and responsibilities related to water issues.

<b>F. Interagency Cooperation</b>
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- F1. The City shall pursue and develop water policies and activities in the San Francisco Bay with the Santa Clara Valley Water District, water wholesalers and retailers, wastewater agencies, pollution prevention agencies and other regulatory and governmental bodies.
- F2. The City shall continue to cooperate with other public and private jurisdictions and agencies to coordinate planning, prevention and emergency response and relief efforts related to flood control.
- F3. The City shall work with the Santa Clara Valley Water District to identify and promote policies and procedures for the protection of reservoir water quality.

<b>G. Advocacy</b>
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- G1. The City shall continue to inform decision-makers on all levels of government on water management issues.
- G2. The City shall advocate and promote appropriate and reasonable laws and regulations on all levels of government based on data driven decisions.